Abstract

The components of cigarette smoke, known until now, do not explain the overwhelming hazardous effects of smoking; this invention describes the isolation, identification and procedures for determination of the structure, properties and assay of a relatively stable major harmful oxidant (cs-oxidant) present in the cigarette smoke, the content of which is about 190±10 μg per cigarette; the cs-oxidant alone almost quantitatively accounts for the oxidative damage of proteins produced by the aqueous extract of whole cigarette smoke, it is also responsible for the oxidative damage of DNA; since the cs-oxidant is relatively stable, it further explains the deleterious effects of the side stream smoke and passive smoking; a number of chemical compounds / agents including vitamin C have been found to prevent the cs-oxidant induced protein oxidation *in vitro*.